```
=> fil wpix
FILE 'WPIX' ENTERED AT 15:34:10 ON 20 SEP 2007
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FILE LAST UPDATED:                     14 SEP 2007    <20070914/UP>
MOST RECENT THOMSON SCIENTIFIC UPDATE:    200759      <200759/DW>
DERWENT WORLD PATENTS INDEX SUBSCRIBER FILE, COVERS 1963 TO DATE

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    documents, but they can be identified by 20060101/UPIC and
    20061231/UPIC and 20060601/UPIC. <<<

>>> Indian patent publication number format enhanced in DWPI - see NEWS <<
<

FOR A COPY OF THE DERWENT WORLD PATENTS INDEX STN USER GUIDE,
PLEASE VISIT:
http://www.stn-international.de/training_center/patents/stn_guide.pdf

FOR DETAILS OF THE PATENTS COVERED IN CURRENT UPDATES, SEE
http://scientific.thomson.com/support/patents/coverage/latestupdates/

>>> FOR DETAILS ON THE NEW AND ENHANCED DERWENT WORLD PATENTS INDEX
    PLEASE SEE
http://www.stn-international.de/stndatabases/details/dwpi_r.html <<<


=> d his nofile

     (FILE 'HOME' ENTERED AT 13:37:51 ON 20 SEP 2007)

     FILE 'HCAPLUS' ENTERED AT 13:38:23 ON 20 SEP 2007
L1             1 SEA ABB=ON  PLU=ON  US2004184961/PN
                 D IALL

     FILE 'WPIX' ENTERED AT 13:38:56 ON 20 SEP 2007
L2             1 SEA ABB=ON  PLU=ON  US20040184961/PN
                 D IFULL
L3               QUE ABB=ON  PLU=ON  OPTICAL?(2A)(FIBER? OR FIBRE? OR
                 FIBRA?)
L4               QUE ABB=ON  PLU=ON  (INFRARED(W)RADIAT? OR IR)(3A)SENSOR?
L5               QUE ABB=ON  PLU=ON  (INFRARED(W)RADIAT? OR IR)(3A)(DETECT
                 OR? OR METER# OR METRE# OR INDICATOR? OR RECORDER? OR
                 ANALYZER? OR MONITOR?)
L6               QUE ABB=ON  PLU=ON  DIVID? OR SEPARAT?
L7               QUE ABB=ON  PLU=ON  INTERSECT?
L8            95 SEA ABB=ON  PLU=ON  L3 AND (L4 OR L5)
L9            13 SEA ABB=ON  PLU=ON  L8 AND (L6 OR L7)
L10              QUE ABB=ON  PLU=ON  DEVICE? OR APPARAT? OR APP## OR
                 EQUIP? OR ASSEMBLY OR ASSEMBLIES
L11            8 SEA ABB=ON  PLU=ON  L9 AND L10
L12              QUE ABB=ON  PLU=ON  (INFRARED(W)RADIAT? OR IR)(3A)TRANSMI
                 T?
L13              QUE ABB=ON  PLU=ON  FIBER? OR FIBRE? OR FIBRA?
L14          188 SEA ABB=ON  PLU=ON  L12 AND L13
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L15             QUE ABB=ON  PLU=ON  CHEMICAL? OR COMPOUND?
L16          27 SEA ABB=ON  PLU=ON  L14 AND L15
L17           1 SEA ABB=ON  PLU=ON  L9 AND L16
L18             QUE ABB=ON  PLU=ON  (THERMAL? OR THERMOL?)(3A)SENSOR?
L19             QUE ABB=ON  PLU=ON  (THERMAL? OR THERMOL?)(3A)(DETECTOR?
                OR METER# OR METRE# OR INDICATOR? OR RECORDER? OR
                ANALYZER? OR MONITOR?)
L20             QUE ABB=ON  PLU=ON  (THERMAL? OR THERMOL?)(3A)SIGNAL?
L21           0 SEA ABB=ON  PLU=ON  L16 AND (L18 OR L19 OR L20)
L22          19 SEA ABB=ON  PLU=ON  L16 AND L3
L23           4 SEA ABB=ON  PLU=ON  L22 AND (L4 OR L5)
L24           1 SEA ABB=ON  PLU=ON  L22 AND (L6 OR L7)
L25           1 SEA ABB=ON  PLU=ON  L2 OR L17 OR L24
L26          11 SEA ABB=ON  PLU=ON  L11 OR L17 OR L23 OR L24

     FILE 'HCAPLUS' ENTERED AT 14:46:21 ON 20 SEP 2007
L27         515 SEA ABB=ON  PLU=ON  L3 AND (L4 OR L5)
L28          19 SEA ABB=ON  PLU=ON  L27 AND (L6 OR L7)
L29           9 SEA ABB=ON  PLU=ON  L28 AND L10
L30           3 SEA ABB=ON  PLU=ON  L29 AND L15
L31           1 SEA ABB=ON  PLU=ON  (L29 OR L30) AND (L18 OR L19 OR L20)
L32         512 SEA ABB=ON  PLU=ON  L12 AND L13
L33          95 SEA ABB=ON  PLU=ON  L32 AND L15
L34          65 SEA ABB=ON  PLU=ON  L33 AND L3
L35          16 SEA ABB=ON  PLU=ON  L34 AND (L4 OR L5)
L36           3 SEA ABB=ON  PLU=ON  L35 AND (L6 OR L7)
L37           5 SEA ABB=ON  PLU=ON  L30 OR L31 OR L36
L38           6 SEA ABB=ON  PLU=ON  L29 NOT L37
L39             QUE ABB=ON  PLU=ON  END# OR TERMINA? OR TAIL?
L40           1 SEA ABB=ON  PLU=ON  L38 AND L39
L41          11 SEA ABB=ON  PLU=ON  L29 OR L37 OR L40
L42           6 SEA ABB=ON  PLU=ON  L37 OR L40

     FILE 'COMPENDEX' ENTERED AT 15:06:06 ON 20 SEP 2007
L43          67 SEA ABB=ON  PLU=ON  L3 AND (L4 OR L5)
L44           1 SEA ABB=ON  PLU=ON  L43 AND (L6 OR L7)
L45          90 SEA ABB=ON  PLU=ON  L12 AND L13
L46          39 SEA ABB=ON  PLU=ON  L45 AND L15
L47           0 SEA ABB=ON  PLU=ON  L46 AND (L18 OR L19 OR L20)
L48          24 SEA ABB=ON  PLU=ON  L46 AND L3
L49           2 SEA ABB=ON  PLU=ON  L48 AND (L4 OR L5)
L50           3 SEA ABB=ON  PLU=ON  L48 AND  (L6 OR L7)
L51           4 SEA ABB=ON  PLU=ON  L44 OR L49 OR L50

     FILE 'ANABSTR' ENTERED AT 15:14:41 ON 20 SEP 2007
L52          23 SEA ABB=ON  PLU=ON  L3 AND (L4 OR L5)
L53           1 SEA ABB=ON  PLU=ON  L52 AND (L6 OR L7)
L54          15 SEA ABB=ON  PLU=ON  L12 AND L13
L55           2 SEA ABB=ON  PLU=ON  L54 AND L15
                D
L56           3 SEA ABB=ON  PLU=ON  L53 OR L55

     FILE 'JAPIO' ENTERED AT 15:17:48 ON 20 SEP 2007
L57          12 SEA ABB=ON  PLU=ON  L3 AND (L4 OR L5)
L58           1 SEA ABB=ON  PLU=ON  L57 AND (L6 OR L7)
L59          43 SEA ABB=ON  PLU=ON  L12 AND L13
L60           3 SEA ABB=ON  PLU=ON  L59 AND L15
                D SCA
L61           4 SEA ABB=ON  PLU=ON  L58 OR L60
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     FILE 'PASCAL' ENTERED AT 15:20:35 ON 20 SEP 2007
L62           56 SEA ABB=ON  PLU=ON  L3 AND (L4 OR L5)
L63            2 SEA ABB=ON  PLU=ON  L62 AND (L6 OR L7)
                 D SCA
L64           41 SEA ABB=ON  PLU=ON  L12 AND L13
L65            1 SEA ABB=ON  PLU=ON  L63 AND L64
L66            9 SEA ABB=ON  PLU=ON  L64 AND L15
L67            7 SEA ABB=ON  PLU=ON  L66 AND L3
L68            0 SEA ABB=ON  PLU=ON  (L63 OR L65 OR L66 OR L67) AND (L18
                 OR L19 OR L20)
L69            2 SEA ABB=ON  PLU=ON  (L63 OR L65 OR L66 OR L67) AND (L4
                 OR L5)
L70           10 SEA ABB=ON  PLU=ON  L63 OR L65 OR L66 OR L67 OR L69
L71            2 SEA ABB=ON  PLU=ON  L70 AND L39
L72           10 SEA ABB=ON  PLU=ON  L70 OR L71

     FILE 'WPIX' ENTERED AT 15:27:27 ON 20 SEP 2007
                 SEL L26 PN,APPS

     FILE 'HCAPLUS' ENTERED AT 15:27:41 ON 20 SEP 2007
L73            6 SEA ABB=ON  PLU=ON  (DE1984-3408082/APPS OR DE1985-350608

     FILE 'PASCAL' ENTERED AT 15:29:01 ON 20 SEP 2007
L74              QUE ABB=ON  PLU=ON  BIND?
L75            0 SEA ABB=ON  PLU=ON  (L66 OR L67) AND L74
L76              QUE ABB=ON  PLU=ON  SENSOR? OR DETECTOR? OR METER# OR
                 METRE# OR INDICATOR? OR RECORDER? OR ANALYZER? OR
                 MONITOR?
L77            5 SEA ABB=ON  PLU=ON  (L66 OR L67) AND L76
L78            8 SEA ABB=ON  PLU=ON  L63 OR L71 OR L77

     FILE 'HCAPLUS' ENTERED AT 15:31:39 ON 20 SEP 2007
L79            5 SEA ABB=ON  PLU=ON  L42 NOT L73

     FILE 'HCAPLUS, COMPENDEX, ANABSTR, JAPIO, PASCAL' ENTERED AT
     15:32:55 ON 20 SEP 2007
L80           24 DUP REM L79 L51 L56 L61 L78 (0 DUPLICATES REMOVED)


=> d l26 ifull 1-11

L26  ANSWER 1 OF 11  WPIX COPYRIGHT 2007       THE THOMSON CORP on STN
ACCESSION NUMBER:      2005-408238 [42]   WPIX
DOC. NO. CPI:          C2005-125733 [42]
DOC. NO. NON-CPI:      N2005-331318 [42]
TITLE:                 Control system for controlling operation of
                       internal-combustion engine of motor vehicle,
                       includes sensor comprising infrared
                       spectrophotometer on board the motor vehicle
DERWENT CLASS:         E36; H06; J04; Q52; Q51; S03; V07; X22
INVENTOR:              PIZZI M
PATENT ASSIGNEE:       (FIAT-C) CRF SCPA
COUNTRY COUNT:         34

PATENT INFORMATION:

      PATENT NO       KIND DATE     WEEK      LA  PG           MAIN IPC
      ---------------------------------------------------------------------
      EP 1538323       A2 20050608 (200542)* EN  11[6]
      US 20050120707   A1 20050609 (200542)  EN
```

US 7143575 B2 20061205 (200680) EN

APPLICATION DETAILS:

| PATENT NO | KIND | APPLICATION | DATE |
|---|---|---|---|
| EP 1538323 A2 | | EP 2004-22759 | 20040924 |
| US 20050120707 A1 | | US 2004-976793 | 20041101 |
| US 7143575 B2 | | US 2004-976793 | 20041101 |

PRIORITY APPLN. INFO: IT 2003-TO982 20031205

INT. PATENT CLASSIF.:

IPC ORIGINAL: F01N0003-00 [I,A]; F01N0003-00 [I,C]; F02D0041-00 [I,A]; F02D0041-00 [I,C]; F02D0041-14 [I,A]; F02D0041-14 [I,C]; G01J0003-42 [I,A]; G01J0003-42 [I,C]; G01M0015-00 [I,A]; G01M0015-00 [I,C]; G01N0021-31 [I,C]; G01N0021-35 [I,A]

IPC RECLASSIF.: F02D0041-00 [I,A]; F02D0041-00 [I,C]; F02D0041-14 [I,A]; F02D0041-14 [I,C]; G01J0003-00 [I,C]; G01J0003-04 [I,A]; G01J0003-06 [I,A]; G01J0003-42 [I,A]; G01J0003-42 [I,C]; G01M0015-04 [I,C]; G01M0015-10 [I,A]

BASIC ABSTRACT:

EP 1538323 A2 UPAB: 20051222

NOVELTY - A control system for controlling operation of an internal-combustion engine of a motor vehicle, has a sensor comprising infrared spectrophotometer on board the motor vehicle.

DETAILED DESCRIPTION - A control system for controlling operation of an internal-combustion engine (1) of a motor vehicle, comprises electronic control **devices** (2) which affect running of the engine. A sensor (4) is provided for detecting the composition of the exhaust gases of the engine. An electronic control unit (6) is provided for controlling the operation of the electronic **devices** according to the signals at output from the sensor. The **sensor** comprises an infrared ( **IR**) spectrophotometer on board the motor vehicle.

USE - For controlling operation of an internal-combustion engine (claimed) of a motor vehicle.

ADVANTAGE - The inventive control system can reduce the environmental impact of motor vehicles with internal-combustion engines and, at the same time, reduce the fuel consumption. DESCRIPTION OF DRAWINGS - The figure is a block diagram of the inventive control system.

Internal-combustion engine (1) Electronic control **devices** (2) Sensor (4)
Signals (5, 7)
Electronic control unit (6) TECHNOLOGY FOCUS:

MECHANICAL ENGINEERING - Preferred Component: The IR spectrophotometer is of the type using electrostatic micro-shutters. It comprises a light source, a **separator** for **separating** the light beam emitted by the source into the components corresponding to the different wavelengths, a sensor designed to receive the radiation coming from the **separator** and to emit at output electrical signals indicating the wavelengths of the radiation received, in which the electrostatic micro-shutters are set between the **separator** and the sensor. The sensor is formed by a single photodiode. The spectrophotometer further comprises an optical element for converging the radiation at output from the electrostatic micro-shutters into the single photodiode. The electrostatic-shutter is controlled to select each time a single wavelength to be analyzed. The electrostatic micro-shutters are arranged in a matrix array in a plane perpendicular to the direction of the light, and each one comprises a petal having one end fixed on top of a

substrate and designed to adhere by electrostatic effect to the substrate when a potential difference is applied between a conductor film functioning as electrode associated to the petal and a conductor film functioning as electrode associated to the substrate. **Optical-fiber** guide mechanism is associated to each cylinder of the engine to enable detection of the composition of the gases present in the combustion chamber of each cylinder of the engine. The sensor also comprises a lambda-sensor for detecting the oxygen present in the exhaust gases..

FILE SEGMENT: CPI; GMPI; EPI
MANUAL CODE: CPI: E11-Q03C; E31-D02; H06-C05; J04-B01A
EPI: S03-E04A5B; S03-E04A5G; V07-K01B; X22-A03F; X22-A05X

L26 ANSWER 2 OF 11 WPIX COPYRIGHT 2007 THE THOMSON CORP on STN
ACCESSION NUMBER: 2004-698044 [68] WPIX
DOC. NO. CPI: C2004-246858 [68]
DOC. NO. NON-CPI: N2004-553458 [68]
TITLE: **Chemical** entities investigating **apparatus** comprises **sensor** for sensing **infrared radiation** and being in infrared radiation-sensing contact with first end of each of **optical fibers**
DERWENT CLASS: B04; D16; J04; S03; V07
INVENTOR: FEYGIN I
PATENT ASSIGNEE: (FEYG-I) FEYGIN I
COUNTRY COUNT: 1

PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG | MAIN IPC |
|---|---|---|---|---|---|---|
| US 20040184961 | A1 | 20040923 | (200468)* | EN | 7[6] | |

APPLICATION DETAILS:

| PATENT NO | KIND | APPLICATION | DATE |
|---|---|---|---|
| US 20040184961 | A1 Provisional | US 2003-443824P | 20030130 |
| US 20040184961 | A1 | US 2004-769220 | 20040130 |

PRIORITY APPLN. INFO: US 2004-769220 20040130
US 2003-443824P 20030130
INT. PATENT CLASSIF.:
IPC RECLASSIF.: G01N0021-31 [I,C]; G01N0021-35 [I,A]
BASIC ABSTRACT:
US 20040184961 A1 UPAB: 20050706
NOVELTY - **Chemical** entities investigating **apparatus** comprises **optical fibers** each having two ends (104, 106), and capable of **transmitting infrared radiation (IR)**; **sensor** for sensing **IR**, and being in IR-sensing contact with the first end of each of the **optical fibers**; and **separator** (110) that engages the **fibers** and is for spatially **separating** the **optical fibers.**
DETAILED DESCRIPTION - **Chemical** entities investigating **apparatus** comprises **optical fibers** each having two ends (104, 106), and capable of **transmitting infrared radiation** ( **IR**); **sensor** for sensing **IR**, and being in IR-sensing contact with the first end of each of the **optical fibers**; and **separator** (110) that engages the **fibers** and is for

spatially **separating** the **optical fibers** in a pattern that enables the **optical fibers** to engage individual samples on a sample plate.
USE - For investigating **chemical** entities (claimed).
ADVANTAGE - The **apparatus** is simple, low-cost, and provides high throughput. It is capable of monitoring binding interactions and obtaining the data required for identifying unknown **chemical** entities. It does not require special assay development and labeling.
DESCRIPTION OF DRAWINGS - The figure depicts the inventive **apparatus.**
**Optical fibers** (102)
Ends (104, 106)
Sensor (108)
**Separator** (110)

TECHNOLOGY FOCUS:
INSTRUMENTATION AND TESTING - Preferred Components: The second end of the **optical fibers** is physically adapted to receive a first **chemical** entity. The individual samples comprise a first **chemical** entity. The **apparatus** further comprises a surface having a binding **compound.** The first end of the **optical fibers** (102) is physically coupled to the sensor (108).

FILE SEGMENT: CPI; EPI
MANUAL CODE: CPI: B11-C07B2; B12-K04E; D05-H09; J04-C02
EPI: S03-E04E; V07-N01

L26 ANSWER 3 OF 11 WPIX COPYRIGHT 2007 THE THOMSON CORP on STN
ACCESSION NUMBER: 2000-105256 [09] WPIX
DOC. NO. CPI: C2000-031454 [09]
DOC. NO. NON-CPI: N2000-080883 [09]
TITLE: Sensor specific to hydrogen gas comprises rare earth metal thin film
DERWENT CLASS: E36; J04; S03; U12
INVENTOR: BAUM T H; BHANDARI G
PATENT ASSIGNEE: (ADTE-N) ADVANCED TECHNOLOGY MATERIALS
COUNTRY COUNT: 1

PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG | MAIN IPC |
|---|---|---|---|---|---|---|
| US 6006582 | A | 19991228 | (200009)* | EN | 24[9] | |

APPLICATION DETAILS:

| PATENT NO | KIND | APPLICATION | DATE |
|---|---|---|---|
| US 6006582 A | | US 1998-42698 | 19980317 |

PRIORITY APPLN. INFO: US 1998-42698 19980317
INT. PATENT CLASSIF.:
IPC RECLASSIF.: G01N0021-77 [I,A]; G01N0021-77 [I,C]; H01L0043-00 [I,C]; H01L0043-10 [I,A]

BASIC ABSTRACT:
US 6006582 A UPAB: 20060115
NOVELTY - Sensor for hydrogen includes a rare earth metal thin film which exhibits detectable change in a physical property when exposed to hydrogen gas.
DETAILED DESCRIPTION - The sensor comprises: (i) A film comprising one or more of the rare earths comprising Sc, Y, La, Ce, Pr, Nd, Pm, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, Ac, Th, Pa, U, Np, Pu, Am, Cm, Bk, Cf, Es, Fm, Md, No, Lr and alloys with one or more of Mg, Ca, Ba, Sr, Co and Ir, which is exposed to the gaseous environment and exhibits a change in a physical property in response to the

hydrogen, (ii) The means and circuitry to exhibit the change in physical property. The sensor does not include a hydrogen source arranged to selectively switch the thin film between switched states.

INDEPENDENT CLAIMS are included for: (1) A hydrogen gas detection system for monitoring an extended or remote region such that a multiplicity of sensors is located in specific sectors of the region. (2) A method of detecting hydrogen using the sensor which generates a signal indicative of the hydrogen in the environment. (3) A sensor as above which continuously monitors hydrogen wherein the thin film forms a hydride in response to the hydrogen concentration.

(4) A method of continuously monitoring hydrogen concentration wherein the thin film forms a hydride to change a physical property, and wherein there is an output indicative of the hydrogen concentration.

USE - The sensor is used for detecting hydrogen e.g. in the production of ammonia, methanol, ethanol, aniline and hydrogen chloride, hydroforming, hydrocracking and hydrorefining of petroleum, hydrogenation, reduction of metallic ores, space flight propulsion systems, and microelectronic processing.

ADVANTAGE - The formation of hydride species to induce physical changes provides a sensor specific to hydrogen whereas prior systems have been based on oxidation processes which detect also other reducible species.

TECHNOLOGY FOCUS:

INSTRUMENTATION AND TESTING - Preferred sensor and method: The physical property is optical transmissivity, electrical resistance, magneto-resistance or photoconductivity, and an output **assembly** converts the physical change into a visual, auditory or tactile output. The physical property changes from optical opacity to transparency or from metallic to semiconducting state; or, the sensor includes an electrical resistance monitor for the thin film to detect hydrogen. The film consists of a trivalent rare earth which reacts to form both dihydride and trihydride which have differing physical properties. The film is essentially yttrium, and the change is from a reflecting dihydride metallic state to a transparent trihydride, semiconducting state; when the hydrogen is removed there is an isothermal reversal. The film is overlaid by a hydrogen-permeable material comprising (i) Pd, Pt, Ir, Mg, Ca, Ag, Au, Co or alloys thereof, (ii) a hydrogen-permeable material doped with Mg, Ca, Al, Ir or Co, or (iii) Pd, Pt or Ir, or the film is overlaid with a hydrogen-permeable protective layer comprising alternating doped and undoped material layers wherein the doped layers are Pd, Pt or Ir containing Mg or Al and the undoped layers are Pd, Pt or **Ir.** In a **sensor** for continuous monitoring. The film is applied to one end of an **optical fiber** where the second end is coupled to a signal generating and processing **assembly** comprising a light source and a light detector for reflected light as an optical transmissivity signal to generate signal indicative of hydrogen concentration; the fiber is clad along its length and is branched at the **assembly** end with branches **separately** coupled to the light source and the detector. The light source is a light emitting diode, the film comprises yttrium and has a hydrogen-permeable protective overlayer comprising palladium or alternating doped and undoped layers. Preferred detection system: Different properties are detected when multiple sensors are contacted with hydrogen at different locations. The metal film is 50 - 2000 nm thick and has a 2 - 1000nm thick protective overlayer.

EXTENSION ABSTRACT:

WIDER DISCLOSURE - The film is exposed to hydrogen and a predetermined voltage is applied to the film to switch between window and non-window states in either signal processing or as a structural member.

EXAMPLE - Strips of rare earth metal films were placed in a 1 inch diameter quartz CVD tube and exposed to 700 torr hydrogen. The color turned yellowish in 2 - 3

minutes indicating conversion of Y to YH2 and a minute thereafter the film changed from opaque to transparent. There was an immediate loss of transparency when the hydrogen was withdrawn.

FILE SEGMENT: CPI; EPI
MANUAL CODE: CPI: E31-A03; J04-C04
EPI: S03-E04; S03-E09C; S03-E12; U12-B02A

L26 ANSWER 4 OF 11 WPIX COPYRIGHT 2007 THE THOMSON CORP on STN
ACCESSION NUMBER: 1999-143124 [12] WPIX
DOC. NO. NON-CPI: N1999-103943 [12]
TITLE: Variable step optoelectronic **device** for analysing very short electrical signal - has propagation line with number of photodetectors successively illuminated by laser beam and cooperating with equal number of **optical fibres**
DERWENT CLASS: S01; S02; V07
INVENTOR: CUZIN M; GENTET M; GENTET M C
PATENT ASSIGNEE: (COMS-C) COMMISSARIAT ENERGIE ATOMIQUE
COUNTRY COUNT: 20

PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG | MAIN IPC |
|---|---|---|---|---|---|---|
| WO 9905534 | A1 | 19990204 | (199912)* | EN | 44[18] | |
| FR 2766576 | A1 | 19990129 | (199912) | FR | | |
| EP 998679 | A1 | 20000510 | (200027) | FR | | |
| US 6320367 | B1 | 20011120 | (200174) | EN | | |

APPLICATION DETAILS:

| PATENT NO | KIND | APPLICATION | DATE |
|---|---|---|---|
| WO 9905534 | A1 | WO 1998-FR1604 | 19980721 |
| FR 2766576 | A1 | FR 1997-9363 | 19970723 |
| EP 998679 | A1 | EP 1998-940297 | 19980721 |
| EP 998679 | A1 | WO 1998-FR1604 | 19980721 |
| US 6320367 | B1 | WO 1998-FR1604 | 19980721 |
| US 6320367 | B1 | US 2000-463545 | 20000403 |

FILING DETAILS:

| PATENT NO | KIND | PATENT NO |
|---|---|---|
| EP 998679 A1 | Based on | WO 9905534 A |
| US 6320367 B1 | Based on | WO 9905534 A |

PRIORITY APPLN. INFO: FR 1997-9363 19970723
INT. PATENT CLASSIF.:
IPC RECLASSIF.: G01R0013-22 [N,C]; G01R0013-34 [N,A]; G01R0019-00 [N,A]; G01R0019-00 [N,C]; G01R0029-02 [I,A]; G01R0029-02 [I,C]
BASIC ABSTRACT:

WO 1999005534 A1 UPAB: 20060115
NOVELTY - The **device** has a number of **optical fibres** whose extremities are positioned opposite an equal number of photodetectors. The photodetectors are **separated** by a gap of same size which determines the **device** sensitivity. A lens is positioned between the fibre extremity and the corresponding photodetector. The

photodetectors are placed along a propagation line and successively illuminated by a laser beam.
USE - For analysing electrical signals generated by fast radiation detectors, e.g. X-ray, gamma or **IR detectors.**
ADVANTAGE - Can be used to analyse very short non-repetitive electrical signals. Has simplified structure and optical system with increased efficiency. Has optical interface which reduces spatial instabilities.

FILE SEGMENT: EPI
MANUAL CODE: EPI: S01-D06; S02-K03B1; V07-G04; V07-K

L26 ANSWER 5 OF 11 WPIX COPYRIGHT 2007 THE THOMSON CORP on STN
ACCESSION NUMBER: 1999-069538 [06] WPIX
DOC. NO. NON-CPI: N1999-050979 [06]
TITLE: Centrifugal finisher for nose cones on weapons - includes drive unit that rotates inner vessels about central axis of outer vessel using intermediate rollers that move along inner surface of outer vessel
DERWENT CLASS: P61
INVENTOR: HOFFMAN S E
PATENT ASSIGNEE: (HTEC-N) H TECHNOLOGY
COUNTRY COUNT: 1

PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG | MAIN IPC |
|---|---|---|---|---|---|---|
| US 5848929 | A | 19981215 | (199906)* | EN | 40[34] | |

APPLICATION DETAILS:

| PATENT NO | KIND | APPLICATION | DATE |
|---|---|---|---|
| US 5848929 A | | US 1997-823515 | 19970324 |

PRIORITY APPLN. INFO: US 1997-823515 19970324
INT. PATENT CLASSIF.:
IPC RECLASSIF.: B24B0031-00 [I,C]; B24B0031-033 [I,A]; B24B0031-108 [I,A]

BASIC ABSTRACT:
US 5848929 A UPAB: 20060114 The centrifugal finisher (200) includes a fixed outer vessel (224) and a set of inner vessels positioned inside the outer vessel. The object to be finished are accommodated in the inner vessels. A set of intermediate rollers (250) are positioned between the inner surface of the outer vessel and the outer surface of the inner vessel. The intermediate roller includes a guide groove (290) that engages the guide rail of the outer vessel. A drive unit rotates the inner vessels about the central axis of the outer vessel using intermediate rollers that move along the inner surface of the outer vessel. The drive unit includes and rotor arms (348), at the ends of which a drive roller (352) is mounted. The drive roller is in contact with the outer surface of the inner vessel and biases the inner vessel against the intermediate roller.
USE - For domes and windows, gem stones, orifice for air and liquid metering, nozzles for printing pen tips, guide wires, windows for high temperature and corrosive environment probes for measuring instrument, magnetic tapes, cleaning blades, pistons, ball check values for metering pumps and dispenser, water jet cutting orifices and nozzles, **fiber** optic connectors, **fiber** optic lens, **optical fiber** slicing tips, gauge contact point, **chemical** and medical valves, stylus tips, apertures for particle counting, restrictors, torch tips, air bearings, air craft instrumentation, medical implant devices, gyroscopes, laser optics-mirrors and lenses, substrates for epitaxial deposition of semiconductor electronics, **IR**

transmitting sensor windows used on aircraft, quartz crystal in watches, telescopic mirrors, jet turbine blades.

ADVANTAGE - Finishes surface of object by contact with abrasive pieces caused by centrifugal and rotational forces. Enables polishing and finishing of larger objects by using outer vessel of large diameter. Avoids use of traction surface. Provides desired surface hardening characteristics without damaging object. Enhances optical clarity and strength of lens of missile cones. Removes minute deformities and prevents fluctuation of object to be finished.

FILE SEGMENT: GMPI

L26 ANSWER 6 OF 11 WPIX COPYRIGHT 2007 THE THOMSON CORP on STN

ACCESSION NUMBER: 1998-250565 [22] WPIX
DOC. NO. CPI: C1998-078108 [22]
DOC. NO. NON-CPI: N1998-197805 [22]
TITLE: Remote, in-situ infrared spectroscopy of soils and soil-liquid mixtures - in the 2-12 micron wavelength range, the **fibre** optic IR spectroscopy used with a cone penetrometer to identify and quantify organic contaminants in soil
DERWENT CLASS: C07; J04; S02; S03
INVENTOR: AGGARWAL I D; BUCHOLTZ F; EWING K J; NAU G; SANGHERA J S
PATENT ASSIGNEE: (USNA-C) US SEC OF NAVY
COUNTRY COUNT: 1

PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG | MAIN IPC |
|---|---|---|---|---|---|---|
| US 5739536 | A | 19980414 | (199822)* | EN | 16[17] | |

APPLICATION DETAILS:

| PATENT NO | KIND | APPLICATION | DATE |
|---|---|---|---|
| US 5739536 A | | US 1995-572389 | 19951214 |

PRIORITY APPLN. INFO: US 1995-572389 19951214
INT. PATENT CLASSIF.:
IPC RECLASSIF.: G01J0003-00 [I,C]; G01J0003-02 [I,A]; G01J0003-10 [I,A]; G01J0003-42 [I,A]; G01J0003-42 [I,C]; G01N0033-24 [I,A]; G01N0033-24 [I,C]; G01V0008-00 [I,C]; G01V0008-02 [I,A]; G01V0009-00 [I,A]; G01V0009-00 [I,C]

BASIC ABSTRACT:

US 5739536 A UPAB: 20060114 System for in-situ, subsurface soil measurement of **chemicals**, including water, in soil, comprises: (a) a probe for penetrating the soil, the probe including interior and exterior surfaces, and a window for allowing IR radiation within a wavelength range of 2-12 μm to be transmitted between the interior and exterior surfaces of the probe; (b) means for driving the probe into the soil to several different depths; (c) means for providing IR radiation within the wavelength range of 2-12 μm which radiation passes through the window to irradiate the soil adjacent the window; (d) an **IR transmitting** chalcogenide **optical fibre**; (e) **optical** means within the probe adjacent to the window for **transmitting IR radiation** from the providing means through the window into the soil and for collecting IR radiation within about the 2-12 μm wavelength range reflected from the soil back through the window into a first end of the chalcogenide **optical fibre**, and (f) means coupled to a second end of the **IR transmitting** chalcogenide **optical fibre** for receiving and analysing the reflected

IR radiation passing through the **optical fibre** to obtain information on **chemicals** present at various depths of the soil through which the probe passes.
USE - The method is used for remote, in-situ infrared spectroscopy of soils and soil-liquid mixtures.
ADVANTAGE - The **fibre** optic IR spectroscopy is used with a cone penetrometer, in the 2-12 µm wavelength range, to identify and quantify organic contaminants in soil, the optical radiation in the 2-12 µm wavelength range being **transmitted** via an **IR-transmitting** optic **fibre** to an **optical** system in a cone penetrometer.

DOCUMENTATION ABSTRACT:

US5739536

System for in situ, sub-surface soil measurement of **chemicals**, including water, in soil, comprises:

(a) a probe for penetrating the soil, the probe including interior and exterior surfaces, and a window for allowing IR radiation within a wavelength 2-12 µm to be transmitted between the interior and exterior surfaces of the probe;

(b) means for driving the probe into the soil to several different depths;

(c) means for providing IR radiation within the wavelength 2-12 µm which radiation passes through the window to irradiate the soil adjacent the window;

(d) an **IR transmitting** chalcogenide **optical fibre**;

(e) optical means within the probe adjacent to the window for **transmitting IR radiation** from the providing means through the window into the soil and for collecting IR radiation within about the 2-12 µm wavelength reflected from the soil back through the window into a first end of the chalcogenide **optical fibre**, and

(f) means coupled to a second end of the **IR transmitting** chalcogenide **optical fibre** for receiving and analysing the reflected IR radiation passing through the **optical fibre** to obtain information on **chemicals** present at various depths of the soil through which the probe passes.

USE

The apparatus is used for remote, in situ infrared spectroscopy of soils and soil-liquid mixtures.

ADVANTAGE

The **fibre** optic IR spectroscopy is used with a cone penetrometer, in the 2-12 µm wavelength range, to identify and quantify organic contaminants in soil, the optical radiation in the 2-12 µm wavelength range being **transmitted** via an **IR-transmitting** optic **fibre** to an **optical** system in a cone penetrometer.

PREFERRED SYSTEM

The probe is a cone penetrometer and a reflector is provided having ≥ 1 focal point and an IR source at the focal point for providing the IR radiation. The radiation providing means includes an IR source, and there is an optical assembly of transmission/collection optics operating over a wavelength 2-12 .mu.m for **transmitting IR radiation** from the source to the soil and for collecting radiation reflected from the soil.

The analyser is a spectrometer. The **IR transmitting** chalcogenide **optical fibre** has an attenuation of ≤ 1 dB/m within the wavelength range

of 2-12 µm. (TC)
FILE SEGMENT: CPI; EPI
MANUAL CODE: CPI: C11-C01; C11-C07B2; C12-K04; J04-B01C
EPI: S02-K08A; S03-D06; S03-E04A5B; S03-E04A5S; S03-E14E7

L26 ANSWER 7 OF 11 WPIX COPYRIGHT 2007 THE THOMSON CORP on STN
ACCESSION NUMBER: 1996-117345 [13] WPIX
DOC. NO. NON-CPI: N1996-098127 [13]
TITLE: Boiler cleanliness determining **appts.** for recovery boiler and power plant - has extendable arm, e.g. soot blower or lance, on which is provided multiple **IR sensors** connected to computer via monitor
DERWENT CLASS: Q72; S03
INVENTOR: MOSKAL T E
PATENT ASSIGNEE: (BABW-C) BABCOCK & WILCOX CO; (DIAM-N) DIAMOND POWER INT INC
COUNTRY COUNT: 5

PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG | MAIN IPC |
|---|---|---|---|---|---|---|
| AU 9527161 | A | 19960208 | (199613)* | EN | 33[10] | |
| CA 2154537 | A | 19960126 | (199621) | EN | | |
| US 5615953 | A | 19970401 | (199719) | EN | 14[10] | |
| NZ 272587 | A | 19980226 | (199813) | EN | | |
| AU 696989 | B | 19980924 | (199850) | EN | | |
| MX 193632 | B | 19991007 | (200101) | ES | | |

APPLICATION DETAILS:

| PATENT NO KIND | APPLICATION DATE |
|---|---|
| AU 9527161 A | AU 1995-27161 19950725 |
| US 5615953 A | US 1994-279736 19940725 |
| NZ 272587 A | NZ 1995-272587 19950717 |
| CA 2154537 A | CA 1995-2154537 19950724 |
| MX 193632 B | MX 1995-3195 19950724 |
| AU 696989 B | AU 1995-27161 19950725 |

FILING DETAILS:

| PATENT NO | KIND | PATENT NO |
|---|---|---|
| AU 696989 B | Previous Publ | AU 9527161 A |

PRIORITY APPLN. INFO: US 1994-279736 19940725
INT. PATENT CLASSIF.:
MAIN: G01N025-000
IPC RECLASSIF.: G01N0025-72 [I,A]; G01N0025-72 [I,C]
BASIC ABSTRACT:
AU 9527161 A UPAB: 20060111 The **appts.** includes an extension arm, several infra-red non-contact sensors, and a computer. The **IR sensors** are provided along the length of the extension arm, e.g. a lance or a soot blower. The computer is linked to a monitor which receives data from the **IR sensors**. The arm is extendable into the boiler near its tubes and **separate** temperature readings are taken along the length of the arm. Based on the readings, the computer can determine the build up

on the tubes. **Optical fibres** may also be used to direct radiation to the **IR sensors**. Viewing of the boiler inside is permitted through use of a video camera. USE/ADVANTAGE - Provides before and after assessments once various cleaning innovations are demonstrated in power and recovery boiler tube banks. Is portability with immediate readout. Avoids biases associated with time varying aspects of boiler operation.

FILE SEGMENT: GMPI; EPI
MANUAL CODE: EPI: S03-A03; S03-B01D; S03-B01E

L26 ANSWER 8 OF 11 WPIX COPYRIGHT 2007 THE THOMSON CORP on STN
ACCESSION NUMBER: 1993-329063 [42] WPIX
DOC. NO. NON-CPI: N1993-254054 [42]
TITLE: Target detection **device** for low-flying aircraft - uses sensors associated with **separate** airborne body ,e.g. missile, coupled to aircraft via flexible cable with relative position correction of sensor signals, i.e. **optical fibre** carries targetting data to missile
DERWENT CLASS: Q25; Q79; W06; W07
INVENTOR: FRIESE D
PATENT ASSIGNEE: (DAIM-C) DEUT AEROSPACE AG
COUNTRY COUNT: 1

PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG | MAIN IPC |
|---|---|---|---|---|---|---|
| DE 4238521 | C1 | 19931021 | (199342)* | DE | 4[2] | |

APPLICATION DETAILS:

| PATENT NO | KIND | APPLICATION | DATE |
|---|---|---|---|
| DE 4238521 C1 | | DE 1992-4238521 | 19921114 |

FILING DETAILS:

| PATENT NO | KIND | PATENT NO |
|---|---|---|
| DE 4238521 C1 | Add to | DE 4126354 A |

PRIORITY APPLN. INFO: DE 1992-4238521 19921114
INT. PATENT CLASSIF.:
IPC RECLASSIF.: F41G0003-00 [I,C]; F41G0003-02 [I,A]; F41G0003-14 [I,A]
BASIC ABSTRACT:

DE 4238521 C1 UPAB: 20050510 The detection **device** includes sensors operating in different spectral ranges incorporated in, or attaching to, a **separate** body (11) secured to the aircraft (100) via a high tension cable (12), with an **optical fibre** coupling path between the sensors and an evaluation **device** onboard the aircraft. The effect of the independent movement of the body on the sensor signals is corrected by continuously detecting its angular position relative to the aircraft and supplying the position data to the evaluation **device**. The missile has an onboard computer processing the received targetting data. Pref. an **IR** or microwave **sensor** (10), is used to detect the ground target and an additional **IR sensor** is used to track the aircraft (100). USE/ADVANTAGE - Improved targetting system for air-launched missile.

FILE SEGMENT: GMPI; EPI
MANUAL CODE: EPI: W06-B01B1; W07-B

L26 ANSWER 9 OF 11 WPIX COPYRIGHT 2007 THE THOMSON CORP on STN
ACCESSION NUMBER: 1990-009701 [02] WPIX
TITLE: Passive **IR** movement **detector** for room surveillance system - with **optical fibre** coupling between **optical fibre** bundle receiving IR radiation and central **device**
DERWENT CLASS: S03; V07; W05
INVENTOR: DENKE F; ROSNER B
PATENT ASSIGNEE: (ALLM-C) ASEA BROWN BOVERI AG
COUNTRY COUNT: 11

PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG | MAIN IPC |
|---|---|---|---|---|---|---|
| EP 349936 | A | 19900110 | (199002)* | DE | 4[1] | |

APPLICATION DETAILS:

| PATENT NO | KIND | APPLICATION | DATE |
|---|---|---|---|
| EP 349936 A | | EP 1989-112053 | 19890701 |

PRIORITY APPLN. INFO: DE 1988-8644 19880706
INT. PATENT CLASSIF.:
IPC RECLASSIF.: G08B0013-189 [I,C]; G08B0013-193 [I,A]
BASIC ABSTRACT:

EP 349936 A UPAB: 20050429 The **IR** movement **detector** has at least one optical element (1) and an associated **IR sensor** coupled to a central **device** (6) for amplification and evaluation of the received signals and incorporating the operating current supply.

Each optical element (1) comprises a hemispherical surface defined by the adjacent end faces of an IR **optical fibre** bundle (4) and is located within a given room zone, the central **device** (6) located in a **separate** room zone (3), with an **optical fibre** coupling (7) between each optical element (1) and the central **device** (6).

Pref. the detection characteristics of each optical elements (1) can be varied by variation of the alignment and/or the length or density of the individual **fibres** of the **optical fibre** bundle (4).

ADVANTAGE - Low-cost **device** with good protection against sabotage.

FILE SEGMENT: EPI
MANUAL CODE: EPI: S03-C09; V07-N; W05-B01C

L26 ANSWER 10 OF 11 WPIX COPYRIGHT 2007 THE THOMSON CORP on STN
ACCESSION NUMBER: 1989-046226 [06] WPIX
DOC. NO. CPI: C1989-020414 [21]
DOC. NO. NON-CPI: N1989-035382 [21]
TITLE: Polymer processing monitor - includes IR source, IR transmission **fibre** with a sensor portion embedded in the polymer and an IR spectrum analyser
DERWENT CLASS: A35; S03; V07
INVENTOR: STEVENSON W A
PATENT ASSIGNEE: (FOSV-C) FOSTER-MILLER INC
COUNTRY COUNT: 1

PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG | MAIN IPC |
|---|---|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| US 4798954 | A | 19890117 | (198906)* | EN | 5[5] |
| US 33789 | E | 19920107 | (199205) | EN | |

APPLICATION DETAILS:

| PATENT NO | KIND | APPLICATION | DATE |
|---|---|---|---|
| US 4798954 | A | US 1987-10306 | 19870203 |
| US 33789 | E | US 1987-10306 | 19870203 |
| US 33789 | E | US 1990-515433 | 19900426 |

PRIORITY APPLN. INFO: US 1987-10306 19870203
US 1990-515433 19900426

INT. PATENT CLASSIF.:
IPC RECLASSIF.: G01N0021-31 [N,C]; G01N0021-35 [N,A]; G01N0021-41 [N,C]; G01N0021-43 [N,A]; G01N0021-55 [I,A]; G01N0021-55 [I,C]

BASIC ABSTRACT:
US 4798954 A UPAB: 20050427 **IR** spectroscopy system for **monitoring** the processing of a polymer material comprises an IR source; an IR spectrum analyser; an IR transmission **fibre** having a transmission portion and a sensor portion embedded in the polymer; and means for coupling the **fibre** to the source to **transmit IR** through the **fibre** to the **sensor** portion, the resulting **IR** spectra being analysed by the analyser to provide kinetic information on the processing of the polymer.
USE/ADVANTAGE - Especially used in monitoring the curing of resins, especially a resin-**fibre** matrix or resin-**fibre** laminate (claimed). Non-destructive method provides high quality process control information.

FILE SEGMENT: CPI; EPI
MANUAL CODE: CPI: A09-C; A09-D03; A11-B09C; A11-C02D; A12-S08
EPI: S03-A02; S03-E04; S03-E04A; S03-E14D7; V07-K; V07-N

L26 ANSWER 11 OF 11 WPIX COPYRIGHT 2007 THE THOMSON CORP on STN
ACCESSION NUMBER: 1985-243857 [40] WPIX
TITLE: Combined optical reception system for heat and laser radiation - with extraction of laser radiation after **separation** of radiation cones by scanning mirror
DERWENT CLASS: P81; Q79; W06; W07
INVENTOR: GRAGE L
PATENT ASSIGNEE: (SIEI-C) SIEMENS AG
COUNTRY COUNT: 11

PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG | MAIN IPC |
|---|---|---|---|---|---|---|
| EP 156181 | A | 19851002 | (198540)* | DE | 41[19] | |
| DE 3506088 | A | 19860821 | (198635) | DE | | |
| US 4713544 | A | 19871215 | (198806) | EN | | |
| EP 156181 | B | 19890524 | (198921) | DE | | |
| DE 3570529 | G | 19890629 | (198927) | DE | | |

APPLICATION DETAILS:

| PATENT NO | KIND | APPLICATION | DATE |
|---|---|---|---|
| EP 156181 A | | EP 1985-102260 | 19850228 |
| DE 3506088 A | | DE 1984-3408082 | 19840305 |

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     DE 3570529 G                         DE 1984-3408082 19840305
     DE 3506088 A                         DE 1985-3506088 19850221
     DE 3570529 G                         DE 1985-3506088 19850221
     US 4713544 A                         US 1985-708250 19850305

PRIORITY APPLN. INFO: DE 1985-3506088 19850221
                      DE 1984-3408082 19840305
INT. PATENT CLASSIF.:
     MAIN/SEC.:       G01C005-00; G02B023-12; G02B026-10
 IPC RECLASSIF.:      F41G0003-00 [I,C]; F41G0003-06 [I,A]; G01S0017-00
                      [I,C]; G01S0017-02 [I,A]; G01S0007-48 [I,C];
                      G01S0007-481 [I,A]; G01S0007-481 [I,C];
                      G01S0007-499 [I,A]
BASIC ABSTRACT:
     EP 156181 A   UPAB: 20060104 The optical system has a scanning mirror (14), an IR
     optic (15) and respective detectors (16) for the heat radiation and the laser
     radiation. The laser radiation is deflected from the common reception channel at a
     point after the scanning mirror (14) at which full separation of the two
     convergent radiation cones is obtained.
     Pref., a single detector support has a central detector (16) for the IR radiation
     surrounded by a detector array for the laser radiation to which the separated
     laser light is fed via a set of optical fibres.
     USE - For combined heat imaging appts. and laser range finder.
FILE SEGMENT:         GMPI; EPI
MANUAL CODE:          EPI: W06-A06A; W07-A


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FILE COVERS 1970 TO DATE.

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THE BASIC INDEX >>>

=> fil anabstr
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FILE LAST UPDATED: 20 SEP 2007 <20070920/UP>
FILE COVERS 1980 TO DATE.

>>> SIMULTANEOUS LEFT AND RIGHT TRUNCATION IS AVAILABLE IN
THE BASIC INDEX (/BI) AND CHEMICAL NAME (/CN) FIELDS <<<

=> fil japio
FILE 'JAPIO' ENTERED AT 15:34:43 ON 20 SEP 2007


FILE LAST UPDATED: 10 SEP 2007 <20070910/UP>
FILE COVERS APRIL 1973 TO MAY 31, 2007

>>> GRAPHIC IMAGES AVAILABLE <<<

=> fil pascal
FILE 'PASCAL' ENTERED AT 15:34:48 ON 20 SEP 2007


FILE LAST UPDATED: 17 SEP 2007 <20070917/UP>
FILE COVERS 1977 TO DATE.

>>> SIMULTANEOUS LEFT AND RIGHT TRUNCATION IS AVAILABLE
IN THE BASIC INDEX (/BI) FIELD <<<

=> d l80 iall 1-24

L80 ANSWER 1 OF 24 HCAPLUS COPYRIGHT 2007 ACS on STN
AN 2006:1124590 HCAPLUS Full-text
DN 145:445885
ED Entered STN: 27 Oct 2006
TI Semiconductor diode for IR spectral range
IN Matveev, B. A.
PA Russia
SO Russ., 10pp.
CODEN: RUXXE7
DT Patent
LA Russian
CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related
Properties)
Section cross-reference(s): 76
FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|

```
PI    RU 2286618          C2     20061027    RU 2002-119616
                                                            200207
                                                            16
PRAI RU 2002-119616              20020716
CLASS
 PATENT NO.       CLASS  PATENT FAMILY CLASSIFICATION CODES
 -------------    -----  ----------------------------------------------
 RU 2286618       IPCI   H01L0033-00 [I,A]; H01L0031-12 [I,A]
                  IPCR   H01L0033-00 [I,C]; H01L0033-00 [I,A]; H01L0025-00
                         [I,C*]; H01L0025-00 [I,A]; H01L0031-12 [I,C];
                         H01L0031-12 [I,A]
```

AB Semiconductor **devices** are described which comprise diode sources and receivers, which radiate and receive radiation from surface in IR spectral range. The **device** can be used in gas anal. **devices**, spectrometers, and detection and communication systems. The semiconductor **devices** for IR spectral range, which diode has p- and n- areas with current-conducting contacts **separated** by p-n junction, active area, which is elec. connected with p-n junction, and at least one optical module. The module is optically connected with the active area by means of an optical **compound** The module has a thickness which does not exceed a value of reverse value of average absorption factor of the module within the working range of quantum energies. The active area is made with a prohibited area thickness being compared with the energy of quantum of the working spectral range.

ST semiconductor diode **IR detector** source

IT Diodes
(IR semiconductor; semiconductor diode for IR spectral range)

IT Optical **detectors**
Semiconductor lasers
(**IR**; semiconductor diode for IR spectral range)

IT Arsenide glasses
Sulfide glasses
Telluride glasses
RL: DEV (Device component use); USES (Uses)
(antimony arsenic sulfide telluride; semiconductor diode for IR spectral range)

IT IR lasers
(near-IR; semiconductor diode for IR spectral range)

IT IR sources
**Optical fibers**
Optical reflectors
(semiconductor diode for IR spectral range)

IT IR lasers
(semiconductor; semiconductor diode for IR spectral range)

IT 7440-36-0, Antimony, uses 7440-38-2, Arsenic, uses 7704-34-9, Sulfur, uses 13494-80-9, Tellurium, uses
RL: DEV (Device component use); USES (Uses)
(antimony arsenic sulfide telluride glass; semiconductor diode for IR spectral range)

IT 7440-66-6, Zinc, uses
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(dopant; semiconductor diode for IR spectral range)

IT 60676-86-0, Vitreous silica
RL: DEV (Device component use); USES (Uses)
(quartz fiber; semiconductor diode for IR spectral range)

IT 1344-28-1, Alumina, uses
RL: DEV (Device component use); USES (Uses)
(sapphire-type; semiconductor diode for IR spectral range)

IT 1303-11-3, Indium arsenide (InAs), uses 7440-21-3, Silicon, uses 7440-57-5, Gold, uses 7440-74-6, Indium, uses 12645-36-2, Gallium indium arsenide phosphide 22398-80-7, Indium phosphide

(InP), uses 106070-25-1, Gallium indium arsenide 177408-89-8, Antimony indium arsenide phosphide 184153-62-6, Antimony indium arsenide phosphide (Sb0.05-0.09InAs0.73-0.86P0.09-0.18) 229311-75-5, Antimony gallium indium arsenide (Sb0-0.07Ga0-0.07In0.93-1As0.93-1)
RL: DEV (Device component use); USES (Uses)
(semiconductor diode for IR spectral range)

IT 7440-31-5, Tin, uses 7440-54-2, Gadolinium, uses
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(semiconductor diode for IR spectral range)

L80 ANSWER 2 OF 24 PASCAL  on STN
AN 2004-0183800 PASCAL Full-text
CP 
TIEN Coherent hollow-core waveguide bundles for infrared imaging
AU GOPAL Veena; HARRINGTON James A.; GOREN Alon; GANNOT Israel
CS Rutgers University, Department of Ceramic and Materials Engineering, 607 Taylor Road, Piscataway, New Jersey 08854-8065; Tel Aviv University, Department of Biomedical Engineering, Faculty of Engineering, Tel Aviv 69978, Israel; Tel Aviv University, Department of Biomedical Engineering, Faculty of Engineering, Tel Aviv 69978, Israel; National Institutes of Health, Bethesda, Maryland 20892
SO Optical engineering, (2004-05), 43(5), 1195-1199
ISSN: 0091-3286 CODEN: OPEGAR
DT Journal
BL Analytic
CY United States
LA English
AV INIST-15166
AB Coherent IR fiber optic bundles for use in IR imaging from 2 to 12 μm are fabricated from rigid hollow-glass waveguide arrays. The bore of each hollow glass tube in the bundle is coated with thin films of metallic Ag followed by AgI for enhanced reflectivity. The coating of the rigid bundle is done using liquid phase chemistry techniques applied to all tubes simultaneously. The hollow-glass arrays are composed of up to 900 individual tubes with bore sizes as small as 50 μm. Several rigid hollow-core arrays are used to transmit an IR image of a small loop of hot wire and a sample of tissue heated by a CO.sub.2 laser. .COPYRGT. 2004 Society of Photo-Optical Instrumentation Engineers.
CC 001D03G02C1; Applied sciences; Electronics; Electric circuits, Microwave circuits, Optical circuits, Optoelectronic circuits
001B40B70C; Physics; Optics; Materials science
001B40B79W; Physics, Optics
001B40B55L; Physics; Optics
001B60A15L; Physics; Materials science; Crystal growth
001B40B25K; Physics; Optics
001B00G60V; Physics; Metrology
PAC 4281B; 4270C; 4279W; 4255L; 8115L; 4225K; 0760V
CT Instrumentation; Experimental study; Optical fiber fabrication; Fiber optic sensors; Infrared imaging; Optical glass; Silver compounds; Optical arrays; Optical films; Gas lasers, Liquid phase deposited coatings; Light coherence

L80 ANSWER 3 OF 24 HCAPLUS  on STN
AN 2003:298247 HCAPLUS Full-text
DN 138:403928

ED Entered STN: 18 Apr 2003
TI Real-Time Monitoring of Distillations by Near-Infrared Spectroscopy
AU Pasquini, Celio; Scafi, Sergio H. F.
CS Instituto de Quimica, Universidade Estadual de Campinas, Sao Paulo, 13084-971, Brazil
SO Analytical Chemistry (2003), 75(10), 2270-2275
CODEN: ANCHAM; ISSN: 0003-2700
PB American Chemical Society
DT Journal
LA English
CC 51-23 (Fossil Fuels, Derivatives, and Related Products)
Section cross-reference(s): 47, 73
AB A simple **device** is described to couple a fast-scanning acoustooptic tunable filter-based NIR spectrophotometer to a distillation **apparatus** for monitoring the condensed vapor in real time. The **device** consists of a small funnel whose glass neck (2-mm diameter) is bent into an "U" format to produce a flow cell of **apprx.**150-μL inner volume A pair of **optical fibers** is used to deliver the monochromatic light and to collect the fraction passing through the glass tube. The end of the condenser of the distillation head touches the wall of the small funnel. The condensed liquid flows uncoupled from pressure changes in the interior of the distillation head. Absorbance spectra were obtained, during the distillation, as avs. of 50 scans (4 s) every 5 s in the spectral range 950-1800 nm with nominal resolution of 2.0 nm. In the first expts., the distns. were performed at constant power supplied to the sample (25 mL) in a microdistn. **apparatus** working without any type of reflux column. The usefulness of the real-time monitoring of distillation is demonstrated using some prepared binary mixts. and by comparing the distillation behavior of adulterated and regular gasoline samples. Data anal. and interpretation are facilitated by employing principal component anal. The system accesses the composition of the condensate, which can **sep.** and concentrate one or more **compds.** present in the original sample.
ST **monitoring** distn near **IR** spectroscopy
IT IR spectroscopy
(near-**IR**; real-time **monitoring** of distns. by near-IR spectroscopy)
IT Distillation
(real-time monitoring of distns. by near-IR spectroscopy)
IT Gasoline
RL: AMX (Analytical matrix); ANST (Analytical study)
(real-time monitoring of distns. by near-IR spectroscopy)
RE.CNT 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) American Society For Testing And Materials; Standard Test Method for Distillation of Petroleum Products 1995, ASTM D-86
(2) Associacao Brasileira de Normas Tecnicas; Produtos de Petroleo-Determinacao das Propriedades de Destilacao 1998, NBR-9619
(3) Blanco, M; J Analyst 2000, V125, P1823 HCAPLUS
(4) Boyd, D; Proceedings of 9th International Conference on Near Infrared Spectroscopy P357
(5) Chung, H; Bull Korean Chem Soc 2001, V22, P37 HCAPLUS
(6) Faber, M; Anal Chem 1998, V70, P2972
(7) Heigl, J; Anal Chem 1947, V19, P293 HCAPLUS
(8) Hidajat, K; J Near Infrared Spectrosc 2000, V8, P53 HCAPLUS
(9) Kelly, J; Anal Chem 1989, V61, P313 HCAPLUS
(10) Otto, M; Chemometrics 1998
(11) Prufer, H; Analusis 1995, V23, PM14 HCAPLUS
(12) Raimundo, I; Lab Microcomput 1994, V13, P55 HCAPLUS
(13) Reboucas, M; J Near Infrared Spectrosc 2001, V9, P253 HCAPLUS
(14) Spakowiski, A; Anal Chem 1950, V22, P1419
(15) Valleur, M; Pet Technol 1999, V4, P81
(16) Wong, J; Analyst 1982, V107, P1282 HCAPLUS

(17) Workman, J; Near Infrared Spectrosc 1996, V4, P69 HCAPLUS

L80 ANSWER 4 OF 24 PASCAL COPYRIGHT 2007 INIST-CNRS. ALL RIGHTS RESERVED. on STN
AN 2003-0451957 PASCAL Full-text
CP Copyright .COPYRGT. 2003 INIST-CNRS. All rights reserved.
TIEN The effect of GaSe on Ga-La-S glasses
Non-oxide and new optical glasses 13: proceedings of the 13th International Symposium on Non-Oxide Glasses and New Optical Glasses, Pardubice, Czech Republic, 9-13 September 2002 (ISNOG 13)
AU SHEPHARD J. D.; KANGLEY R. I.; HAND R. J.; FURNISS D.; O'DONNELL M.; MILLER C. A.; SEDDON A. B.
FRUMAR Miloslav (ed.); WAGNER Tomas (ed.)
CS Applied Optics & Photonics Group, Physics Department, Heriot Watt University, Edinburgh EH14 4AS, United Kingdom; Centre for Glass Research, Department of Engineering Materials, Sir Robert Hadfield Building, University of Sheffield, Mappin Street, Sheffield S1 3JD, United Kingdom; School of Mechanical, Materials, Manufacturing Engineering and Management, University of Nottingham, University Park, Nottingham NG7 2RD, United Kingdom
Research Center of the University of Pardubice, Pardubice, Czech Republic; Department of General and Inorganic Chemistry, University of Pardubice, Pardubice, Czech Republic
SO Journal of non-crystalline solids, (2003), 326-27(1), 439-445, 6 refs.
Conference: 13 ISNOG 13: International Symposium on Non-Oxide Glasses and New Optical Glasses, Pardubice (Czech Republic), 9 Sep 2002
ISSN: 0022-3093 CODEN: JNCSBJ
DT Journal; Conference
BL Analytic
CY Netherlands
LA English
AV INIST-14572, 354000112941550810
AB Gallium-lanthanum-sulphide (GLS) glasses have been investigated as candidate materials for fabrication of IR **transmitting optical fibres**. Previously, significant oxide additions have been used to increase glass stability and also to allow the **tailoring** of the RI the produce compatible core/clad pairs. However, oxide additions have a detrimental effect on the IR transparency and suitability for rare-earth doping. A method of extrusion has been proposed that can be used to produce core/clad **optical fibre** performs. In this work a new method of altering the RI of the GLS glasses is investigated which can be used in conjunction with extrusion to produce **optical fibre** preforms. Variation of refractive index has been achieved using small additions of GaSe to the standard GLS composition, producing GLSSe glasses, avoiding the need for unfavourable oxide additions.
CC 001B40B70K; Physics; Optics; Materials science
001B70H20C; Physics; Condensed matter physics, Materials science; Optical properties
PAC 4270K; 7820C
CT Infrared radiation; Experimental study; Transparency; Doping; Extrusion; Refractive index; Absorption spectra; Chalcogenide glasses; Gallium sulfides; Lanthanum sulfides; Ternary **compounds**

L80 ANSWER 5 OF 24 ANABSTR COPYRIGHT 2007 RSC on STN
AN 63(34):A10 ANABSTR Full-text
TI Selective online sensor for liquid analysis.
SO LaborPraxis (2001) 25(1), 22-23
CODEN: LAPRDE ISSN: 0344-1733

DT Journal
LA German
AB In an evanescence-field sensor for determining total organic **compounds** in water the sample is passed through a tube containing an **IR-transmitting fibre** the ends of which project through the tube wall. The **fibre** is coated with a polymer layer onto which the organic **compounds** but not the water are adsorbed. An IR beam is passed along the **fibre** and the organic **compounds** are determined by monitoring the amount of **transmitted IR** radiation which is related to the total organic **compounds** concentration in the sample. The online sensor should be useful in environmental and process analysis.
CC *A General Analytical Chemistry (60000)
H Environment, Agriculture and Food
E Applied and Industrial Analysis
IT Analyte(s):
organic **compounds**
(detmn. of total, sensors for)
Matrix:
waters; natural; industrial products
(detmn. of total organic **compounds** in, sensors for)
Concepts:
sensors
(for organic **compounds**, IR polymer-coated **fibre** online)
process analysis
(online, sensors for, IR polymer-coated **fibre**, for detmn. of total organic **compounds** in water)
environmental monitoring
(of total organic **compounds**, sensors for, IR polymer-coated **fibre** online)

L80 ANSWER 6 OF 24 COMPENDEX COPYRIGHT 2007 EEI on STN
AN 2000(29):3516 COMPENDEX Full-text
TI **Fiber** optic thermal imaging system based on hollow glass waveguides or silver halide **fibers** as scanning elements.
AU Dekel, B. (Tel Aviv Univ, Tel-Aviv, Isr); Inberg, A.; Croitoru, N.; Shalem, S.; Katzir, A.
SO Optical Engineering v 39 n 4 2000.p 941-946
CODEN: OPEGAR ISSN: 0091-3286
PY 2000
DT Journal
TC Theoretical
LA English
AB A simple **fiber** optic thermal imaging system based on a thin and flexible IR waveguide is constructed.Two types of waveguides are used: silver halide **fiber** and hollow glass waveguide.The thermal image of a warm object is formed at the focal plane of an **IR transmitting** lens.The proximal end of the waveguide is fixed and attached to a pyroelectric **IR detector.**The distal end of the waveguide scans the thermal image in two directions.The **IR** radiation is **transmitted** through the waveguide to the detector.The signals from the detector are coupled into a suitable monitor, which produces a representation of the thermal image.In preliminary experiments, we attach a small magnet to the distal tip of the waveguide and move the tip using an electromagnetic field. For a target of spatial frequency 1.25 cycles/mm the modulation transfer function (MTF) of the system is 0.2 and for a target of spatial frequency of 0.1 cycles/mm the minimum resolvable temperature difference (MRTD) is 0.5 degree C.The system could be applied in industry or in medicine where imaging in the mid-IR and in a restricted space is required.(Author abstract) 18 Refs.
CC 741.3 Optical Devices and Systems; 741 Light, Optics and Optical Devices; 741.1.2 Fiber Optics; 714.3 Waveguides; 812.3 Glass; 804.2 Inorganic Components

CT *Infrared imaging; Transfer functions; Optical waveguides; Optical glass; **Optical fibers**; Silver **compounds**
; Scanning; Light modulation; Imaging systems; **Fiber** optics
ST **Fiber** optic thermal imaging systems; Hollow glass waveguides; Silver halide **fibers**

L80 ANSWER 7 OF 24 PASCAL  on STN
AN 2001-0117881 PASCAL Full-text
CP 
TIEN TEIFU : A high-resolution integral field unit for the William Herschel Telescope
Optical and **IR** telescope instrumentation and **detectors** : Munich, 27-31 March 2000
AU MURRAY Graham J.; ALLINGTON-SMITH Jeremy R.; CONTENT Robert; DODSWORTH George N.; DUNLOP Colin N.; HAYNES R.; SHARPLES Ray M.; WEBSTER John
IYE Masanori (ed.); MOORWOOD Alan F.M. (ed.)
CS Astronomical Instrumentation Group, University of Durham, United Kingdom; Anglo-Australian Observatory, Australia
SO SPIE proceedings series, (2000), 4008(p.1), 611-622, 9 refs.
Conference: Optical and IR telescope instrumentation and detectors. Conference, Munich (Germany, Federal Republic of), 27 Mar 2000
ISSN: 1017-2653
ISBN: 0-8194-3633-X
DT Journal; Conference
BL Analytic
CY United States
LA English
AV INIST-21760, 354000092025410630
AB In order to enhance the spectroscopic capabilities of the William Herschel Telescope (WHT) we have recently completed an integral field unit comprising 1000 elements ('Thousand-Element Integral Field Unit', or TEIFU). Integral field units maximize the efficiency of a spectrograph by re-formatting a two-dimensional field in order to match the entrance slit of the camera. Such techniques enable high-resolution spectral data to be obtained over the whole field simultaneously, and are particularly suited for use with adaptive optics systems. TEIFU is an **optical fibre** system employing microlens arrays for input and output coupling. The field is **divided** into two halves, permitting object and background to be derived during the same exposure. In addition, the fields can be optically re-positioned to form a larger, single field for greater object coverage. Thus the observer can choose between different observing modes to emphasize background subtraction or contiguous field. The fore-optics can be changed to alter the image scale and to interface to the NAOMI adaptive optics system which is currently under construction. TEIFU in its present configuration as tested on the WHT, gives a spatial sampling of 0.25 arcsec with a total field of 7.8 x 7.0 arcsec, but a 0.125 arcsec sampling option may be provided. We are also considering an option to upgrade TEIFU for near IR operation. This paper will outline system design, operation and preliminary results.
CC 001E03A55A; Universe sciences; Astronomy; Astrophysics
CT Spectral resolution; Instruments; Efficiency; Adaptive optics; Adaptive systems; **Optical fibers**; Arrays; Input-output; Coupling; Construction; Configuration; Microlens; Operation; Design; Astronomical instruments; High-resolution methods; Astronomical telescopes; Infrared imaging; Performance

L80 ANSWER 8 OF 24 PASCAL  on STN
AN 2000-0446701 PASCAL Full-text

TIEN A review of **IR transmitting** hollow waveguides
Infrared Waveguides
AU HARRINGTON J. A.
SCHAAFSMA David (introd.)
CS Ceramic & Materials Engineering, Rutgers University, Piscataway, New Jersey, United States
Tetra Tech Data Systems, Carlsbad, CA, United States
SO Fiber and integrated optics, (2000), 19(3), 211-227, 36 refs.
ISSN: 0146-8030 CODEN: FOIOD2
DT Journal
BL Analytic
CY United Kingdom
LA English
AV INIST-18056, 354000091247290020
AB Infrared (IR) **transmitting** hollow waveguides are an attractive alternative to solid-core IR **fibers.** Hollow guides are made from plastic, metal, or glass tubes that have highly reflective coatings deposited on the inside surface. These guides have losses as low as 0.1 dB / m at 10.6 μm and may be bent to radii less than 5 cm. For use in high-power laser delivery applications, the guides have been shown to be capable of transmitting up to 3 kW of CO.sub.2 laser power. They are also finding uses in both temperature and **chemical fiber sensor** applications. This paper reviews the progress in hollow waveguide technology with emphasis on the best guides available today.
CC 001D03G02C1; Applied sciences; Electronics; Electric circuits, Microwave circuits, Optical circuits, Optoelectronic circuits
PAC 4282B
CT YAG laser; Wavelength; Power laser; Review; **Fiber** optic **sensors**; Hollow waveguide; Infrared spectrum; Plastic material; Glass; Metal; Reflective coatings; Coating process; High power; CO.sub.2 laser; **Chemical sensor**; Measurement **sensor**; Metal tube

L8C ANSWER 9 OF 24 PASCAL COPYRIGHT 2007 INIST-CNRS. ALL RIGHTS RESERVED. on STN
AN 1999-0346741 PASCAL Full-text

TIEN The use of polymer coated AgClBr **fibers** for **fiberoptic** evanescent wave spectroscopy (FEWS) of biological fluids
Biomedical **sensors**, **fibers**, and **optical** delivery systems : Stockholm, 8-10 September 1998
AU BORMASHENKO E.; POGREB R.; SUTOVSKI S.; VASERMAN I.; KATZIR A.
BALDINI Francesco (ed.); CROITORU Nathan I. (ed.); FRENZ Martin (ed.); LUNDSTROM Ingemar (ed.); MIYAGI Mitsunobu (ed.); PRATESI Riccardo (ed.); WOLFBEIS Otto S. (ed.)
CS The College of Judea and Samaria, The Research Institute, Ariel, 44837, Israel; Raymond and Beverly Sackler Faculty of Exact Sciences, School of Physics and Astronomy, Tel-Aviv University, Tel-Aviv, 69978, Israel
International Society for Optical Engineering, Bellingham WA, United States (patr.)
SO SPIE proceedings series, (1999), 3570, 100-106, 8 refs.
Conference: Biomedical sensors, fibers, and optical delivery systems, Stockholm (Sweden), 8 Sep 1998
ISSN: 1017-2653
ISBN: 0-8194-3032-3
DT Journal; Conference
BL Analytic
CY United States

LA English
AV INIST-21760, 354000084601810120
AB Silver halide **IR-transmitting fibers** were coated with polymer films in order to protect them from deterioration caused by interaction with biological fluids. Such coated **fibers** can be used for human blood serum analysis carried out by **Fiberoptic** Evanescent Wave Spectroscopy (FEWS) using a Fourier Transform infrared (FTIR) spectrometer. A dip-coating procedure was worked out for coating **fibers** with polystyrene or silicone-elastomer thin films. Deterioration tests of coated **fibers** in saline solution that imitates human blood serum salts were performed. These demonstrated that the polymer layers provide protection to the **fibers**, while making it possible to carry out FEWS measurements.
CC 002B26N; Life sciences; Medical sciences; Biomedical engineering
CT Coated material; **Optical fiber**; Evanescent wave; Optical spectrometry; Halides; Silver; Infrared radiation; Biological fluid; Blood; Serum; **Chemical** reaction; Sensitivity analysis; Immersion test

L80 ANSWER 10 OF 24 COMPENDEX 
AN 2000(12):5359 COMPENDEX Full-text
TI Mid-IR **fiber** bundle for remote monitoring and control of **chemical** processing in a CVD chamber.
AU Lu, Ping (Univ New Brunswick, Fredericton, NB, Can); Bao, Xiaoyi; Whidden, Tom
MT Proceedings of the 1999 Infrared Optical Fibers and their Applications.
ML Boston, MA, USA
MD 21 Sep 1999-22 Sep 1999
SO Proceedings of SPIE - The International Society for Optical Engineering v 3849 1999.p 67-73
CODEN: PSISDG ISSN: 0277-786X
PY 1999
MN 56292
DT Journal
TC General Review
LA English
AB With the requirements of the remote control outside CVD clean room environment it is recommended to have a FTIR spectrometer **separated** from the clean room.However to **transmit** mid-IR light from FTIR to CVD chamber in free space is out of question due to the high loss (absorption of water and CO2 etc.).Naturally, the mid-IR **fiber** with the full spectrum transmission range (5000 to 500 cm minus 1) will provide the solution.Unfortunately none of the mid-IR **fiber** can cover such a broad range with low loss, unless a few different kinds of **fibers** are used together.A mid-IR **fiber** bundle consisting of two silver halide and six zirconium fluoride **fibers** was designed and fabricated.The transmission of this bundle shows the broad spectrum coverage of 5000 to 500 cm minus 1, which is required for mid-IR FTIR spectrometer in **monitoring** the gas concentrations in a CVD chamber.The possibility of using this **fiber** bundle for remote monitoring and control of **chemical** process in a CVD chamber will be discussed and some experimental results will be presented.(Author abstract) 8 Refs.
CC 741.1.2 Fiber Optics; 741.1 Light. Optics; 801 Chemistry; 802.2 Chemical Reactions; 804.2 Inorganic Components
CT ***Optical fibers**; Infrared radiation; Fourier transform infrared spectroscopy; Silver **compounds**; Zirconium **compounds**; **Chemical** vapor deposition
ST Mid-infrared Fourier transform infrared spectroscopy
ET C*O; CO2; C cp; cp; O cp

L80 ANSWER 11 OF 24 PASCAL 
AN 2000-0407257 PASCAL Full-text

TIEN An mid-IR fiber bundle for remote **monitoring** and control of **chemical** processing in a CVD chamber
Infrared **optical fibers** and their applications
: Boston MA, 21-22 September 1999
AU PING LU; XIAOYI BAO; WHIDDEN T.
SAAD Mohammed (ed.); HARRINGTON James A. (ed.)
CS Physics Department, University of New Brunswick, Fredericton, New Brunswick, E3B 5A3, Canada; Xylaur Enterprises, Incutech Centre, UNB Campus, Fredericton, New Brunswick E3B 6C2, Canada
International Society for Optical Engineering, Bellingham WA, United States (patr.)
SO SPIE proceedings series, (1999), 3849, 67-73, 8 refs.
Conference: Infrared optical fibers and their applications.
Conference, Boston MA (United States), 21 Sep 1999
ISSN: 1017-2653
ISBN: 0-8194-3442-6
DT Journal; Conference
BL Analytic
CY United States
LA English
AV INIST-21760, 354000090069000080
AB With the requirements of the remote control outside CVD clean room environment it is recommended to have a FTIR spectrometer **separated** from the clean room. However to **transmit** mid-IR light from FTIR to CVD chamber in free space is out of question due to the high loss (absorption of water and CO.sub.2 etc.). Naturally, the mid-IR **fiber** with the full spectrum transmission range (5000 to 500 cm.sup.-.sup.1) will provide the solution. Unfortunately none of the mid-IR **fiber** can cover such a broad range with low loss, unless a few different kinds of **fibers** are used together. A mid-IR **fiber** bundle consisting of two silver halide and six zirconium fluoride **fibers** was designed and fabricated. The transmission of this bundle shows the broad spectrum coverage of 5000 to 500 cm.sup.-.sup.1, which is required for mid-IR FTIR spectrometer in **monitoring** the gas concentrations in a CVD chamber. The possibility of using this **fiber** bundle for remote **monitoring** and control of **chemical** process in a CVD chamber will be discussed and some experimental results will be presented.
CC 001D03G02C4; Applied sciences; Electronics; Electric circuits, Microwave circuits, Optical circuits, Optoelectronic circuits
CT **Optical fiber**; Mid infrared radiation; Measurement method; Remote supervision; Process control; On line; **Chemical** vapor deposition; **Chemical** processing; Remote control; Clean room; Infrared spectrometry; Fourier transform spectroscopy; Water absorption; Absorption spectrum; **Monitoring** system; Processing control; Microelectronic fabrication; **Fiber** bundle; Silver halides; Zirconium fluoride; Experimental study; Experimental result; Waveform

L80 ANSWER 12 OF 24 ANABSTR COPYRIGHT 2007 RSC on STN
AN 60(8):A53 ANABSTR Full-text
TI A new remote-sensing IR device.
AU Ciurczak, E. W.
SO Spectroscopy (Eugene, Oreg.) (1998) 13(1), 24, 26, 28
CODEN: SPECET ISSN: 0887-6703
DT Journal
LA English
AB The hand-holdable non-contact IR reflectance device described (Sensiv, Waltham, MA, USA) consists essentially of a parabolic mirror **divided** along its axis by a vertical plane. One of the half-mirrors focuses the radiation from an IR source at the surface to be examined (working distance 16 in.), and the other collects the reflected radiation and focuses it on an **optical fibre** for transmission to a

conventional or portable FTIR spectrometer. Its use is demonstrated in (i) the validation of cleaning procedures in pharmaceutical manufacture, (ii) the interference-fringe thickness measurement of organic coatings on metals, and (iii) monitoring of the curing of epoxy-coatings.

CC *A General Analytical Chemistry (60000)
C Spectroscopy and Radiochemical Methods
E Applied and Industrial Analysis

IT Matrix:
films
(analysis of, **sensors** for, IR reflectance)
Concepts:
sensors
(IR reflectance, for film and surface analysis)
spectrometry, absorption, infra-red, Fourier-transform
(reflectance sensors based on, for film and surface analysis)
surface analysis
(**sensors** for, **IR** reflectance)

L80 ANSWER 13 OF 24 PASCAL COPYRIGHT 2007 INIST-CNRS. ALL RIGHTS RESERVED. on STN

AN 1998-0015118 PASCAL Full-text



TIEN Blood diagnostics using **fiberoptic** evanescent wave spectroscopy and neural networks analysis

AU GOTSHAL Y.; SIMHI R.; SELA B.-A.; KATZIR A.

CS Raymond and Beverly Sackler Faculty of Exact Sciences, School of Physics and Astronomy, Tel-Aviv University, Tel-Aviv 69987, Israel; The Institute of Chemical Pathology, Sheba Medical Center, Tel-Hashomer, Israel

SO Sensors and actuators. B, Chemical, (1997), 42(3), 157-161, 14 refs.
ISSN: 0925-4005

DT Journal
BL Analytic
CY Switzerland
LA English
AV INIST-19425B, 354000079438720020

AB A spectral analysis of human blood serum was undertaken by **fiberoptic** evanescent wave spectroscopy (FEWS) using a Fourier transform infrared (FTIR) spectrometer. The blood serum samples were introduced into a special cell designed for FEWS of liquids, with an IR **transmitting** silver halide **fiber** as the sensing element. The spectra were analyzed by models of neural networks (NN), and the concentrations of protein, cholesterol and uric acid in human blood serum were obtained. Our results are in agreement with those obtained by ordinary **chemical** enzymatic methods and multivariate calibration methods. The estimated prediction errors obtained (in percent of the average value) were 4.7% for total protein, 22% for cholesterol and 35%, for uric acid. This method can be used for in-situ real-time blood analysis.

CC 002A02G02; Life sciences; Biological sciences; Biochemistry

CT **Chemical sensor**; Optical **sensor**;
Evanescent wave; **Optical fiber**; Neural network;
Infrared spectrometry; Fourier transformation; Measurement in situ;
Biological fluid; Blood; Quantitative analysis; Diagnosis

L80 ANSWER 14 OF 24 PASCAL COPYRIGHT 2007 INIST-CNRS. ALL RIGHTS RESERVED. on STN

AN 1996-0319276 PASCAL Full-text



TIEN Fabrication of long lengths of low-loss IR **transmitting** As.sub.4.sub.0S.sub.(.sub.6.sub.0.sub.-

.sub.x)Se.sub.x glass **fibers**
AU SANGHERA J. S.; NGUYEN V. Q.; PUREZA P. C.; MIKLOS R. E.; KUNG F. H.; AGGARWAL I. D.
CS Naval Research Laboratory, Code 5603.2, Washington, DC 20375, United States
SO Journal of lightwave technology, (1996), 14(5), 743-748, 21 refs.
ISSN: 0733-8724 CODEN: JLTEDG
DT Journal
BL Analytic
CY United States
LA English
AV INIST-20142, 354000043584620140
AB Teflon clad and As.sub.4.sub.0S.sub.6.sub.0 glass clad As.sub.4.sub.0S.sub.5.sub.5Se.sub.5 **fibers** transmitting in the 1-6 μm wavelength region have been fabricated in lengths of about 50 m and with minimum losses of 0.098 and 0.65 dB/m, respectively. Short lengths of the Teflon clad **fiber** possessed a minimum loss of 0.047 dB/m. While current **fiber** losses are dominated by extrinsic scattering and absorption, the calculated theoretical minimum loss is estimated to be 3.6 dB/km at 5.3 μm and is limited by the contribution from the weak absorption **tail**. Improvements in the purification and processing of the glasses into the **optical fibers** are required to reduce the losses further.
CC 001D03G02C1; Applied sciences; Electronics; Electric circuits, Microwave circuits, Optical circuits, Optoelectronic circuits
CT Experimental study; Production process; Optical characteristic; **Optical fiber**; Arsenic Selenides; Arsenic Sulfides; Ternary **compound**; Glass **fiber**; Chalcogenides

L80 ANSWER 15 OF 24 HCAPLUS COPYRIGHT 2007 ACS on STN
AN 1995:874804 HCAPLUS Full-text
DN 123:274725
ED Entered STN: 25 Oct 1995
TI Deuterium concentration analyzer for the hydrogen sulfide-water isotope exchange.
IN Pavelescu, Marian; Vaduva, Eugen
PA Uzina "G", Ramnicu Valcea, Rom.
SO Rom., 5 pp.
CODEN: RUXXA3
DT Patent
LA Romanian
IC ICM G01J003-42
ICS G01N021-35
CC 79-2 (Inorganic Analytical Chemistry)
Section cross-reference(s): 68, 78
FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| PI RO 104811 | B1 | 19940610 | RO 1989-141392 | 19890828 |

PRAI RO 1989-141392 19890828
CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---|---|---|
| RO 104811 | ICM | G01J003-42 |
| | ICS | G01N021-35 |
| | IPCI | G01J0003-42 [ICM,4]; G01N0021-35 [ICS,4]; G01N0021-31 [ICS,4,C*] |
| | IPCR | G01J0003-42 [I,C*]; G01J0003-42 [I,A]; |

G01N0021-31 [I,C*]; G01N0021-35 [I,A]
AB The **analyzer** uses **IR** spectrophotometry and allows for continuous deuterium determination directly in the **sepn** . column, without sample removal. The analyzer consists on an elongated chamber with 2 totally-reflecting sapphire prisms on one **end**. These are connected, by way of **optical fibers**, with an **optical** coupling system, on the far **end**, connected to the **IR** source and a **detector device.** The analyzer is connected online with the computer which controls the process.
ST hydrogen sulfide water isotope exchange; deuterium exchange hydrogen sulfide water
IT Exchange reaction
(deuterium isotope exchange determination in hydrogen sulfide-water by IR spectrophotometry using fiber optic system)
IT 7732-18-5, Water, analysis 7783-06-4, Hydrogen sulfide, analysis
RL: AMX (Analytical matrix); ANST (Analytical study)
(deuterium isotope exchange determination in hydrogen sulfide-water by IR spectrophotometry using fiber optic system)
IT 7782-39-0, Deuterium, analysis
RL: ANT (Analyte); ANST (Analytical study)
(deuterium isotope exchange determination in hydrogen sulfide-water by IR spectrophotometry using fiber optic system)

L80 ANSWER 16 OF 24 JAPIO (C) 2007 JPO on STN
AN 1993-124834 JAPIO Full-text
TI FLUORIDE GLASS
IN NISHII JUNJI
PA NIPPON SHEET GLASS CO LTD
PI JP 05124834 A 19930521 Heisei
AI JP 1991-290251 (JP03290251 Heisei) 19911106
PRAI JP 1991-290251 19911106
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1993
IC ICM C03C003-32
AB PURPOSE: To obtain fluoride glass having excellent **chemical** durability and **IR transmittance** and fit for a **fiber** for optical communication by incorporating ZrF<SB>4</SB>, AlF<SB>3</SB>, YF<SB>3</SB>, LaF<SB>3</SB>, BaF<SB>2</SB>, SrF<SB>2</SB> and NaF in a specified molar ratio. CONSTITUTION: This fluoride glass contains, by mol, >=85%, in total, of 33-50% ZrF<SB>4</SB>, 7-19% AlF<SB>3</SB>, 3.5-11% YF<SB>3</SB>, 0-6.5% LaF<SB>3</SB>, 13-23% BaF<SB>2</SB>, 0-13% SrF<SB>2</SB> and 8-20% NaF. Since the AlF<SB>3</SB> content has been increased without narrowing the IR transmission region, the water resistance of this glass can be improved. For example, glass having a compsn. consisting of, by mol, 37.4% ZrF<SB>4</SB>, 13.8% AlF<SB>3</SB>, 6.9% YF<SB>3</SB>, 2.3% LaF<SB>3</SB>, 18.4% BaF<SB>2</SB>, 6.2% SrF<SB>2</SB> and 15% NaF is colorless and transparent and has 308°C glass transition temperature, 442°C crystallization start point and 520°C m.p. of crystals. COPYRIGHT: (C)1993,JPO&Japio

L80 ANSWER 17 OF 24 JAPIO (C) 2007 JPO on STN
AN 1990-074905 JAPIO Full-text
TI PRODUCTION OF OPTICAL **FIBER** FOR INFRARED LIGHT
IN IKEDO TOSHI; WATARI MASABUMI; SUGIURA HISANORI; NAKANOU HIROMI
PA MATSUSHITA ELECTRIC IND CO LTD
PI JP 02074905 A 19900314 Heisei
AI JP 1988-228230 (JP63228230 Showa) 19880912
PRAI JP 1988-228230 19880912
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1990
IC ICM G02B006-00
ICS G02B006-00

ICA C30B029-10
AB PURPOSE: To improve the power transmittability of the **fiber** by sealing gaseous halogen and allowing a single crystal to grow at the time of producing the single crystal of the base crystal for the polycrystalline **fiber** of thallium halide. CONSTITUTION: For example, the single crystal is used for the base crystal for the **fiber** and the single crystal having >=3×10<SP>3</SP>Ω.cm electric resistivity is used. Production of a KRS-5 (TlBr-TlI crystal) is executed by **compounding** >=99.9% TlBr and 42wt.% and 58wt.% TlI, evacuating the chamber to >=10<SB>6</SB><SP>-</SP>Torr, putting the specified volume of gaseous I<SB>2</SB> therein after about 5 hours and sealing the chamber. The temperature is raised to about 500°C and a screw 6 is slowly lowered after about 6 hours. The crystal is allowed to grow in about one week. Namely, the single crystal is produced in the I<SB>2</SB> atmosphere to form the crystal having the high electric resistivity. The **IR fiber** which can **transmit** high power is produced in this way.
COPYRIGHT: (C)1990,JPO&Japio

L80 ANSWER 18 OF 24 COMPENDEX COPYRIGHT 2007 EEI on STN
AN 1991(2):20005 COMPENDEX DN 910214944 Full-text
TI Applications of **IR transmitting optical fiber** in the **chemical** industry.
AU Driver, Richard D. (Iris Fiber Optics, Inc, Acton, MA, USA); Leskowitz, Garett M.; Curtiss, Lawrence E.
MT Infrared Fiber Optics II.
MO SPIE
ML Los Angeles, CA, USA
MD 18 Jan 1990-19 Jan 1990
SO Proceedings of SPIE - The International Society for Optical Engineering v 1228.Publ by Int Soc for Optical Engineering, Bellingham, WA, USA.p 233-245
CODEN: PSISDG ISSN: 0277-786X
ISBN: 0-8194-0269-9
PY 1990
MN 13850
DT Conference Article
TC Theoretical; Application; Experimental
LA English
AB Infrared transmitting heavy metal fluoride **optical fiber** has been used to **separate** an FTIR analyzer from a remote measurement point. Several types of remote sensors have been developed for species concentration measurements.Remote transmission cells connected to **fiber** cables have been used for the measurement of spectra of liquids and gases.Evanescent wave probes have been developed to obtain spectra in highly absorbing and highly scattering media. Remote spectra taken with an FTIR **fiber**-optic analyzer in the 8000 - 2000 cm minus 1 spectral region are presented.A calculation of detectability limits for these species based on the measured data will be presented.A discussion of sensor multiplexing applied to remote **fiber** optic FTIR spectroscopy will be given.(Author abstract) 10 Refs.
CC 741 Optics & Optical Devices; 802 Chemical Apparatus & Plants; 732 Control Devices
CT ***FIBER** OPTICS:Applications; INFRARED RADIATION; SPECTROSCOPY, INFRARED; REMOTE SENSING; MINERALOGY:Fluorides; **CHEMICAL** INDUSTRY
ST FLUORIDE **OPTICAL FIBERS**; **IR TRANSMITTING FIBERS**

L80 ANSWER 19 OF 24 HCAPLUS COPYRIGHT 2007 ACS on STN
AN 1990:451596 HCAPLUS Full-text
DN 113:51596
ED Entered STN: 03 Aug 1990
TI Fiber-optic **chemical** sensing with

infrared-transmitting **optical fiber**
AU Driver, Richard D.; Leskowitz, Garett M.; Curtiss, Lawrence E.
CS IRIS Fiber Opt., Inc., Acton, MA, 01720, USA
SO Proceedings of SPIE-The International Society for Optical Engineering (1990), 1172(Chem. Biochem. Environ. Fiber Sens.), 60-8
CODEN: PSISDG; ISSN: 0277-786X
DT Journal
LA English
CC 79-2 (Inorganic Analytical Chemistry)
AB A **IR transmitting** heavy metal fluoride **optical fiber** was used to **sep.** a Fourier-transform IR (FTIR) spectrometer from a remote measurement point. Several types of remote sensors were developed for concentration measurements. Remote transmission cells connected to **fiber** cables were used to measure near-IR spectra of liqs. and gases. An evanescent-wave probe for obtaining spectra of highly scattering samples was developed. **Fiber**-optic FTIR may be used to solve many problems in process monitoring and control. Remote transmission cells connected to **fiber** cables were used to measure near-IR spectra of liqs. and gases.
ST **IR fiber** optic **chem sensor**
IT Process control and dynamics
(**IR transmitting optical fibers** in remote **chemical** sensing in)
IT Gas analysis
(by IR Fourier-transform spectrometry using **fiber**-optic **chemical** sensor)
IT **Optical fibers**
(**chemical** sensors, heavy-metal fluoride)
IT Spectrochemical analysis
(**IR**, **fiber**-optic remote **sensors** in)
IT Lubricating oils
(crankcase, IR Fourier-transform of, using **fiber** optic **chemical** sensor)
IT 7732-18-5, Water, analysis
RL: ANT (Analyte); ANST (Analytical study)
(detection of, in isopropanol using **fiber**-optic **chemical** sensor and heavy-metal fluoride **fiber**)
IT 74-82-8, Methane, analysis
RL: ANT (Analyte); ANST (Analytical study)
(detection of, using **optical fiber** in IR spectrometry)
IT 67-63-0, Isopropanol, analysis
RL: AMX (Analytical matrix); ANST (Analytical study)
(water determination in, using **fiber**-optic **chemical** sensor and heavy-metal transmitting **optical fiber**)

L80 ANSWER 20 OF 24 HCAPLUS COPYRIGHT 2007 ACS on STN
AN 1990:451593 HCAPLUS Full-text
DN 113:51593
ED Entered STN: 03 Aug 1990
TI Remote FTIR spectroscopy with heavy metal fluoride **optical fibers**
AU Driver, R. D.; Leskowitz, G. M.; Curtiss, L. E.
CS IRIS Fiber Opt., Acton, MA, 01720, USA
SO Advances in Instrumentation and Control (1989), 44(Pt. 4), 1305-15
CODEN: AINCEV; ISSN: 1054-0032
DT Journal
LA English
CC 79-2 (Inorganic Analytical Chemistry)
Section cross-reference(s): 73
AB IR transmitting zirconium fluoride

optical fiber cables were used to sep. an FTIR spectrometer 50 m from the sensor location. Several types of remote sensors were used. Remote flow-through absorption cells were used for the measurement of spectra of liqs. and gases. Evanescent wave probes were used to obtain spectra in highly scattering or highly absorbing media. Typical spectra in the 1 to 4.5 μm spectral region are presented. The detection sensitivity of the fiber optic FTIR spectrometer is discussed.

ST remote IR spectrochem analysis **optical fiber**

IT Gasoline
RL: ANT (Analyte); ANST (Analytical study)
(detection of, by remote IR spectrometry using **optical fibers**)

IT Wave
(evanescent, detection of remote, using heavy metal fluoride **optical fibers**)

IT **Optical fibers**
(remote Fourier-transform **IR** spectroscopy with **chemical sensors** using heavy-metal fluoride)

IT Gas analysis
(remote, by Fourier transform IR spectrometry using heavy metal fluoride **optical fibers**)

IT Spectrometers
(IR, remote cell for, for anal. using heavy metal fluoride **optical fibers**)

IT Spectrochemical analysis
(IR, remote, using heavy metal fluoride **optical fibers**)

IT 9003-53-6, Polystyrene
RL: ANST (Analytical study)
(IR reflection spectra of film of)

IT 74-82-8, Methane, analysis 111-65-9, Octane, analysis
RL: ANT (Analyte); ANST (Analytical study)
(detection of, by remote IR spectrometry using **optical fibers**)

IT 1310-73-2, Sodium hydroxide, properties
RL: PRP (Properties)
(differential evanescent spectra of aqueous)

L80 ANSWER 21 OF 24 ANABSTR COPYRIGHT 2007 RSC on STN
AN 53(7):C38 ANABSTR Full-text
TI **Fibre**-optic **chemical** sensing with infra-red-transmitting optical **fibre.**
AU Driver, R. D.; Leskowitz, G. M.; Curtiss, L. E. (IRIS Fiber Optics Inc., Acton, MA 01720, USA)
SO Proc. SPIE-Int. Soc. Opt. Eng. (1989) 1172, 50-68
CODEN: PSISDG ISSN: 0277-786X
DT Journal
LA English
AB An 11-m-long heavy metal fluoride optical **fibre** was used to separate an FTIR spectrometer from a remote measurement point. Spectra were obtained using transmission and internal reflection sampling techniques. Remote transmission cells were used to measure the near-IR spectra of various liquid and gases. An evanescent-wave probe is described for obtaining the spectra of highly scattering liquids and pastes. The use of such systems in process monitoring and control is discussed.
CC SC Spectroscopy and Radiochemical Methods (30000)
SE Applied and Industrial Analysis
ST Concepts:
sensors
(optical-**fibre**, heavy metal fluoride, **IR**-

transmitting, for remote FTIR measurements)
spectrometry, infra-red
(FT, optical-fibre sensor for remote)
quality control
(process, optical-fibre sensor for remote FTIR
spectrometric)

L80 ANSWER 22 OF 24 COMPENDEX COPYRIGHT 2007 EEI on STN
AN 1991(5):57317 COMPENDEX DN 910556909 Full-text
TI Remote FTIR spectroscopy with heavy metal fluoride **optical fibers**.
AU Driver, R.D. (Iris Fiber Optics, Acton, MA, USA); Leskowitz, G.M.; Curtiss, L.E.
MT Proceedings of the ISA/89 International Conference Exhibit Part 4 (of 4).
ML Philadelphia, PA, USA
MD 22 Oct 1990-27 Oct 1990
SO Advances in Instrumentation, Proceedings v 44 pt 4.Publ by ISA Services Inc, Research Triangle Pk, NC, USA.p 1305-1315
CODEN: AVINBP ISSN: 0065-2814
PY 1989
MN 13785
DT Conference Article
TC Application
LA English
AB **IR transmitting** zirconim fluoride **optical fiber** cables have been used to **separate** a FTIR spectrometer 50 meters from the sensor location.Several types of remote sensors have been utilized.Remote flow-through absorption cells have been used for the measurement of spectra of liquids and gases.Evanescent wave probes have been used to obtain spectra in highly scattering or highly absorbing media. Typical spectra in the 1 to 4.5 mu m spectral region will be presented.The detection sensitivity of the fiber optic FTIR spectrometer will be discussed.(Author abstract)
CC 741 Optics & Optical Devices; 804 Chemical Products; 801 Chemical Analysis & Physical Chemistry
CT ***OPTICAL FIBERS**; **FIBER** OPTICS;
ZIRCONIUM **COMPOUNDS**; SPECTROSCOPY, INFRARED
ST FTIR SPECTROSCOPY; FLOW THROUGH ABSORPTION CELLS; EVANESCENT WAVE PROBES; ZIRCONIUM FLOURIDE **OPTICAL FIBER** CABLES

L80 ANSWER 23 OF 24 JAPIO (C) 2007 JPO on STN
AN 1983-092838 JAPIO Full-text
TI MEASURING DEVICE FOR LIGHT LOSS
IN SATO CHIAKI
PA OLYMPUS OPTICAL CO LTD
PI JP 58092838 A 19830602 Showa
AI JP 1981-190119 (JP56190119 Showa) 19811127
PRAI JP 1981-190119 19811127
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1983
IC ICM G01M011-02
ICS G01N021-59
AB PURPOSE: To detect the emission output of an **optical fiber** for transmission of IR rays and to measure light losses with high accuracy in said **optical fiber** by using an **IR detector** having plural pyroelectric type **IR sensors**.
CONSTITUTION: After the IR light from a light source 11 is intermitted by a light chopper 21, said light is made incident to the incident end of an **optical fiber** 14 wound on a drum of a specified diameter and is further put into an **IR detector** 15 from the exit end thereof. The many pyrolelectric **IR sensors** 16 provided on the inside surface of the housing 151 of the **detector** 15 detect **IR** light as a change

in temperature The light **divided** by a half mirror 13 is monitored of the fluctuations in the output thereof by a power monitor 20, and is connected together with the outputs of the sensors 16 to a recorder 19. Now, the fiber 14 is cut by each specified length and the output from a lock-in amplifier 18 is read at each cutting. Since there are many sensors in the hermetically closed housing, all of the IR light are detected with good efficiency and the light losses of the **optical fibers** are determined accurately. COPYRIGHT: (C)1983,JPO&Japio

L80 ANSWER 24 OF 24 JAPIO (C) 2007 JPO on STN
AN 1982-145051 JAPIO Full-text
TI INFRARED RAY TRANSMITTING GLASS
IN OSAWA KAZUYA; SHIBATA TOSHIAKI; TAKAHASHI KENICHI
PA AGENCY OF IND SCIENCE & TECHNOL
PI JP 57145051 A 19820907 Showa
AI JP 1981-30522 (JP56030522 Showa) 19810305
PRAI JP 1981-30522 19810305
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1982
IC ICM C03C003-18
ICS C03C003-30
ICA G02B005-14
AB PURPOSE: To manufacture an **IR-transmitting** glass having improved thermal stability and transmitting characteristics, by using a quadri-component material obtained by **compounding** ZrF<SB>4</SB>, BaF<SB>2</SB>, NaF and YF<SB>3</SB> at specific ratios. CONSTITUTION: An **IR-transmitting** glass containing 53∼61mol% ZrF<SB>4</SB>, 18∼ 27mol% BaF<SB>2</SB>, 10∼25mol% NaF, and 1∼6mol% YF<SB>3</SB> wherein the sum of the above four components is 95∼100%. Since the glass has large temperature difference between the glass transition temperature and the crystallization temperature, and is thermally stable, it can be cast to a block having a large thickness. It has excellent light transmitting characteristics such as high transmittance of light from the visible light to the IR ray of about 8μm wavelength and a flat transmitting spectrum. The galss is useful as the material of window or lens of an infrared apparatus or a material of an **IR-transmitting** optical **fiber**.


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